EDITORIAL ARTICLES.

ON CANCER AND CANCEROUS DISEASES.[1]

Sir James Paget thinks that we may justly hope to find a remedy for cancer in the constant, careful study of the likeness of these diseases to those of which we already have means of useful treatment, and that we may be the more hopeful, because the nearest likeness to cancer and cancerous diseases are to two other groups of diseases concerning which there have been in recent times very useful additions to our knowledge.

These groups are, respectively: (1) innocent tumors, and (2) the specific and micro-parasitic diseases.

The peculiar method of growing, purposeless and, as it were, selfish is characteristic of both innocent and cancerous tumors, and seems to indicate a very close affinity between them. It is very rarely seen in any other disease except certain specific ones.

It is also impossible to mark any fair boundary line between innocent and cancerous tumors. The space between, *e. g.*, a common fatty tumor and a cancer of the tongue is bridged over by intermediate forms.

Year by year, in Sir James Paget's opinion, accumulating evidence tends to prove that "each specific disease is due to the influence of a distinct morbid substance on some part or parts at which the characteristic signs of the disease can be and are manifested. Two conditions must coincide in each; the one general or diffused in a morbid material in the blood; the other local, in some part with which this material produces disease." He uses the term "morbid material," for caution's sake, but the context shows that it is a micro-organism which he has in view.

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[1] The Morton Lecture at the Royal College of Surgeons of England, 1887. By Sir James Paget, Bart. F. R. S., etc.

The group of specific diseases by which the conformity of cancers and cancerous diseases may be best tested is "one that includes, as its chief members, syphilis, tuberculosis, glanders, leprosy and actinomycosis, each of which is known to have a distinct micro-parasite."

"Let me," writes Sir James Paget, "point out their most important general agreements. And, first, let it be observed that they are included by Virchow among tumors, under the name of granulomata; and I doubt whether they can be justly excluded from the list for any reasons which would not equally justify the exclusion of many of the cancerous diseases.

Certainly, a tuberculous mass such as one may find in the brain, or a jaw, has more of the general characters of a tumor than any rodent ulcer has or many cancers of the lip or tongue. It is at least evident that all these specific, micro-parasitic diseases are, in their several measures and in some of their forms, morbid growths and self-maintaining. All agree in this general character; they differ from one another in that each has a definite, characteristic and diagnostic method of growing, as shown in its shape and in its substance, both tangible and microscopic, in its relations to the structures which it involves. In these respects they differ from one another about as much as any of them do from cancer."

"Besides, in all these diseases, as in the cancerous, the morbid growths are prone to special modes of degeneration, of partial decay and of death; and then they all tend to ulceration, each with a characteristic method, shown in the shape of the ulcer, the structure of its boundaries, and its mode of affecting the parts on which it encroaches."

"And all the cancerous and the others alike are at some time infective; some by inoculation, all by invasion of adjacent parts or by the transmission of materials, through lymph-spaces, lymphatics, or blood-vessels to parts far off." Sir James Paget holds that likeness in characters so significant as the above "is evidence enough of essential likeness and close affinity in all the diseases in which they are observed; and, therefore, that as we know that in tuberculosis, syphilis, leprosy, and the rest, there is for each a specific morbid material in the blood, so we should believe there is at least one in cancer and cancerous diseases."

He grants that "cancer cannot be inoculated, it is not contagious." But are there not facts recorded that render even this doubtful? However so much the better for the theory advocated.

Sir James Paget's attention has long been directed to the pathology of plants, and he has more than once urged its study as likely to throw light on the diseases of animals. Many forms of woody tumor, "xylomata," grow on various trees. Some evidently grow from buds or "sleeping eyes," as they have been termed, and thereby afford excellent evidence of the truth of Cohnheim's explanation of the origin of tumors, at least of the innocent ones, from portions of germinal tissue remaining undeveloped. On the other hand, *galls* illustrate the influence of a virus in exciting morbid growths. Of these, more than a thousand forms are known, each produced by a different material, or virus, inserted by a different species of insect. "The nature of the virus is," Sir James Paget thinks, "unknown; but so constant are its proportions, and so exactly defined, that the specific characters of each insect are not more invariable than are those of the galls which it has made to grow." It may easily be seen in the larger kinds of galls that their minute structure differs from that of the contiguous normal parts as widely as that of a cancer does from the healthy structures near it.

It is to be noted that "each insect, with unfailing instinct, deposits its egg and its virus in the leaf or other part of the very plant in which the right kind of gall can be found. Each virus requires, as we may say, a susceptible and fitting place and substance; and this is a fact confirming what we believe in the case of many specific diseases, and as I venture to say, in the cancerous. The two conditions must coexist—the specific material, microbe, virus, or whatever we may name it, in the blood which will carry it to every part, and the one appropriate part, texture, or place in which this material can produce the disease."

We cannot quite see the justification which Sir James Paget has for thus roundly asserting that cancer is, in all probability, a blood disease. To support his views he quotes tetanus, hydrophobia and fevers like scarlatina, as diseases sufficiently analogous to cancer for conclusions respecting the last-named disease to be drawn from what is known of the pathology of the others.

We think it a pity at present to in any way mix up the two perfectly distinct questions: (1). Is cancer primarily a blood disease or a local disease, and (2). Is cancer caused by a virus, such as a microbe.

The analogy made out by Sir James Paget himself between cancer and galls, an essentially local disease of plants, is at least as strong as the analogy between cancer and tetanus or scarlatina. And there are strong obvious facts opposed to the idea that cancer is anything but a local disease at its commencement. Excluding the number of cases in which small cancers have been excised and have not returned, why do all kinds of malignant diseases generally, and some kinds almost invariably, when removed and recurring, return in the locality from which the excision took place? Suppose a patient with one cancerous and one healthy breast, and suppose *both* to be thoroughly and completely removed by exactly similar incisions. If recurrence took place, would it not be a hundred to one that it would be on the side originally cancerous? But if it be really a correct theory of cancer that it is primarily a blood disease and is ultimately localised only by what may be termed local accidents, such as traumatisms, senile degenerations, etc., why should not cancer recurring after such a double operation as I have imagined be just as likely to recur in one cicatrix as in the other? It may be replied that it *is* just as likely. I envy the trustfulness of the person who should make such a reply and expect to be believed.

With regard to the heredity of cancer, Sir James writes: "The fact of frequent inheritance is sure in this as in many other diseases, but its method is so mysterious; it is so utterly impossible to conceive the form or the material in which the impregnated ovum contains that which will become or be made cancerous, that it cannot be safe or useful to deduce anything from the bare fact."

Now one essential element in the proof of the theory of inheritance in cancer is the numerical one; and it cannot be said to be very strong even now. If it should once be learned that cancer is in any way contagious (and all the arguments from analogy drawn in the paper before us, without counting clinical facts left unnoticed by it, would incline one to suspect that it may be contagious) where will then be the arguments drawn from figures in support of the theory of cancerous inheritance?

But it is, after all, not from speculation, or at least not directly from it, that we have most reason to hope for answers to the various questions concerning cancer. It is a curious circumstance that just now in England and France respectively, the two most representative surgeons of those countries should be advancing, as deductions from clinical observations, hypotheses which are in some but not all respects identical with theories which surgeons of a younger school in America and Germany claim to have demonstrated by experiment.

C. B. KEETLEY.

GASTROENTEROSTOMY IN LUECKE'S CLINIC.[1]

Before the introduction of this operation by Wölfler unfortunate patients were treated symptomatically. The first complete details of operated cases were given fully in a brochure of v. Hacker, which was a collection of eight cases operated upon in Billroth's clinic. Five of these cases died from the effects of the operation, three were improved. Saltzmann, publishing a series of 23 cases, of which 18 had malignant disease, gives a mortality of twelve following the operation. Both these statistics are certainly unsatisfactory as to the ultimate promise of the operative interference. Rockwitz has collated twenty-two cases from the literature of gastro-enterostomy. Twenty-one of these were performed outside of the Strassburg clinic. Seventeen of the cases were performed for carcinoma and four for cicatricial stenosis

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[1] Die Gastro-enterostomie an der Strassburger Klinik, von Dr. C. Rockwitz, Assistenz Artzt. *Deutsche Zeitschrift. f. Chirurgie*, bd. xxv, hft. 6.